

REMARKS

Claims 1-3, 5, 8, and 10-19 are currently pending, wherein claims 16-19 have been added. Applicant respectfully requests favorable reconsideration in view of the remarks presented herein below.

Claim Rejection under 35 U.S.C. §103(a)

In paragraph 5 of the Office Action (“Action”), the Examiner rejects claims 1-3, 5, 8, and 10-15 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,211,911 to Komiya et al. (“Komiya”) in view of U.S. Patent No. 4,602,289 to Sekine (“Sekine”), and further in view of U.S. Patent No. 5,926,287 to Suzuki et al. (“Suzuki”). Applicant respectfully traverses this rejection.

Re Independent Claims 1 and 3:

Applicant notes that the Examiner has failed to acknowledge and address Applicant’s arguments presented in the Amendment dated August 19, 2006, with respect to the Examiner’s failure to establish a *prima facie* case of obviousness for the combination of Komiya in view of Sekine. Specifically, the Examiner has not responded to Applicant’s submission that there is no disclosure or suggestion that the honeycomb-type imaging device of Sekine would improve vertical resolution over the semiconductor imaging device of Komiya, and that even if, *arguendo*, one skilled in the art were motivated to combine Komiya and Sekine, which Applicant does not concede, the combination would still fail to render claim 1 unpatentable because the

combination fails to disclose each and every claimed element. The prior argument is reiterated herein.

In order to support a rejection under 35 U.S.C. § 103, the Action must establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three criteria must be met. First, there must be some motivation to combine the cited references. Second, there must be a reasonable expectation of success. Finally, the combination must teach each and every claimed element. In the present case, claims 1-3, 5, 8, and 10-15 are not rendered unpatentable by the combination of Komiya and Sekine because the Examiner has failed to establish a *prima facie* case of obviousness as discussed below.

Independent claim 1 defines an image sensing device. The device includes, *inter alia*, an image sensing unit that includes a honeycomb-type solid-state electronic image sensor, a first recording controller that records image data output from the image sensing unit, and a second recording controller that records data that represents characteristics based on a structure of on-chip lenses or inner lenses of the honeycomb-type solid-state image sensor such that the image is corrected using the characteristic data when the image data is reproduced. The honeycomb-type solid-state image sensor has a number of photoelectric transducers disposed in column and row directions, wherein the photoelectric transducers for odd-numbered columns are placed in odd or even numbered rows and the photoelectric transducers for even-numbered columns are placed in even or odd numbered rows.

In rejecting claim 1, the Examiner asserts that Komiya discloses an image sensing device which includes a first and second recording controller as claimed inasmuch as Komiya discloses an image processing unit that sends the setting values of the photographing conditions, such as

the focal length, lens position, shutter speed of the CCD, white balance, compression mode, and the like, to a data writing section. These setting values are combined with the compressed image data as header information and written in a memory card 23. In addition, the Examiner notes that Komiya fails to disclose that the image sensing unit includes a honeycomb-type solid-state electronic image sensor as claimed. However, the Examiner relies on Sekine as disclosing that honeycomb image sensors are “notoriously well known in the art.” Therefore, the Examiner asserts that it would have been obvious for one skilled in the art “to have included a honeycomb image sensor, as taught by Sekine, in the image sensing apparatus and corresponding method of operating thereof, disclosed by Komiya et al., for the advantage of improving vertical resolutions.” These assertions are unfounded for the following reasons.

First, as discussed in § 2143.01 of the MPEP, the mere fact all the elements of a claimed invention may have been individually known in the art is not sufficient in and of itself to establish a *prima facie* case of obviousness, absent some objective reason to combine the individual teachings. Furthermore, the mere fact that a reference can be combined does not render the resultant combination obvious unless the prior art also discloses the desirability of the combination. In this regard, the Examiner asserts that one skilled in the art would have been motivated to replace the semiconductor image pickup element 60 of Komiya with a honeycomb image sensor as disclosed by Sekine in order to achieve the advantage of improving vertical resolutions. To support this assertion, the Examiner points to column 2, lines 34-37 of Sekine.

Although the cited passage, i.e., column 2, lines 34-37, of Sekine discloses that an object of Sekine’s invention is to provide a solid-state image pick-up device in which horizontal and vertical pixel packing densities are improved and vertical resolution is also improved, one skilled

in the art would appreciate that these improvements are over prior art honeycomb-type image pick-up devices as shown in Figs. 1A –1C of Sekine, not all image pick-up devices. Nowhere in Sekine is there any disclosure or suggestion that the Sekine's honeycomb-type image pick-up device would improve vertical resolution over the semiconductor image pickup device of Komiya. Furthermore, nowhere in Komiya is there any disclosure or suggestion that the vertical resolution of Komiya's image sensing device needs improvement. Therefore, one skilled in the art would not have been motivated to modify the system of Komiya to alleviate a non-existent problem. Accordingly, absent proper motivation to combine Komiya and Sekine, the rejection of claim 1 is improper.

Second, even if, *arguendo*, one skilled in the art were motivated to combine Komiya and Sekine, which Applicant does not concede, the combination would still fail to render claim 1 unpatentable because the combination fails to disclose each and every claimed element. For example, neither Komiya nor Sekine disclose or suggest a second controller that records data that represents characteristics based on a structure of *on-chip lenses or inner lenses* of the honeycomb-type solid-state electronic image sensor as claimed.

The Examiner asserts that Komiya discloses a second controller as claimed inasmuch as Komiya discloses storing lens characteristics as header information with the compressed image data. Although Komiya discloses recording lens characteristics, such as focal length, which is arguably characteristic of the structure of the lens, if the Examiner reviews the cited passage (i.e., column 5, lines 54-67), he will see that these characteristics relate to the photographing conditions of the photographing lens system (i.e., zoom lens 15), not of the CCD 17. Therefore, even if one skilled in the art were motivated to replace the CCD 17 of Komiya with a

honeycomb-type image pick-up sensor as disclosed in Sekine, the resultant combination would still fail to disclose or suggest recording data that represents characteristics based on a structure of on-chip or inner lenses of *the honeycomb-type solid-state electronic image sensor* as claimed. To the contrary, the only characteristic of the CCD that is recorded is the shutter speed, which is not based on the structure of the lens of the sensor. In fact, the combination of Komiya and Sekine does not result in a honeycomb-type solid-state electronic image sensor that includes on-chip lenses or inner lenses. Accordingly, claim 1 is patentable over the combination of Komiya and Sekine for at least the reason that the combination fails to disclose or suggest each and every claimed element.

Independent claim 3 defines a method of controlling operation of an image sensing device. The method includes, *inter alia*, recording data that represents characteristics based on a structure of on-chip lenses or inner lenses of the honeycomb-type solid state electronic image sensor such that the image is corrected using the characteristic data when the image data is reproduced on a recording medium in association with the image data. Therefore, claim 3 is patentable over the combination of Komiya and Sekine because (1) the Examiner fails to provide proper motivation to combine Komiya and Sekine or (2) the combination fails to disclose recording data that represents characteristics based on a structure of on-chip lenses or inner lenses of the honeycomb-type solid state electronic image sensor. (See discussion above with respect to claim 1.)

The Examiner expressly concedes that “Komiya et al. fails to teach...B) wherein the characteristics represented are based on a structure of on-chip or inner lenses of the image

sensor” (page 3, lines 14-21). The Examiner introduces the reference to Suzuki in order to cure the deficiency of Komiya in view of Sekine.

Suzuki allegedly teaches an image sensing unit and recording controller for recording data on EEPROM 13, said data comprising a plurality of correction patterns for correcting exposure based on aperture values and/or exit pupil location. Said correction patterns are “made in consideration of manufacturing variations of microlenses corresponding to image elements”.

Though Suzuki appears to teach storing characteristics based on a structure of on-chip lenses of an image sensor, Komiya in view of Sekine and further in view of Suzuki fails to disclose or suggest a second recording controller for recording data representing characteristics based on a structure of on-chip lenses or inner lenses of the honeycomb-type solid state electronic image sensor on *the same recording medium in association with the image data*. Suzuki appears to teach storing the correction patterns on EEPROM 13 and applying them via signal processing to the image data prior to storing the image data on the recording medium 9 (see Figs. 4 and 6). The correction patterns of Suzuki are **not** stored on the recording medium in association with the recording medium. In contrast, the present invention comprises a first controller for recording image data on a recording medium and a second controller for recording data, which represents characteristics based on a structure of on-chip lenses or inner lenses of the honeycomb-type solid-state electronic image sensor such that the image data is corrected using the characteristic data when the image data is reproduced, *on the recording medium in association with the image data*.

Furthermore, though Suzuki appears to disclose an imaging element with on-chip lenses, Suzuki fails to disclose a *honeycomb-type* imaging element with on-chip lenses. Likewise,

though Sekine appears to disclose a honeycomb-type imaging element, Sekine fails to disclose a honeycomb-type image *with on-chip lenses or inner lenses*. Neither reference contains motivation or suggestion why one should be modified in view of the other to arrive at such an imaging element, nor has the Examiner provided any motivation or suggestion why one of ordinary skill in the art would combine Sekine and Suzuki with Komiya in such a manner resulting in a device with a second recording controller for recording data representing characteristics *based on a structure of on-chip lenses or inner lenses of a honeycomb-type solid state electronic image sensor such that the image data is corrected using the characteristic data when the image data is reproduced, on the recording medium in association with the image data*.

Accordingly, claims 1 and 3 are patentable over the combination of Komiya, Sekine, and Suzuki for at least the reason that the combination fails to disclose or suggest each and every claimed element of the claims.

Re Dependent Claims 2, 5, 8, and 10-19:

Claims 2, 5, 8, and 10-15 variously depend from independent claims 1 and 3. Therefore, claims 2, 5, 8, and 10-15 are patentable over the combination of Komiya, Sekine, and Suzuki for at least those reasons presented above with respect to claims 1 and 3. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-3, 5, 8, and 10-15 under 35 U.S.C. § 103(a).

Newly added claims 16-19 variously depend from independent claims 1 and 3. Therefore, claims 16-19 are patentable over the combination of Komiya, Sekine, and Suzuki for at least those reasons presented above with respect to claims 1 and 3.

Conclusion

The application is in condition for allowance. Notice of same is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact D. Richard Anderson Reg. No. 40,439 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

December 20, 2006

Respectfully submitted,

By 

D. Richard Anderson
Registration No.: 40,439
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant